

Alternative Measures of Price Change for GNP, 1967-1970

The implicit price deflator for GNP, a byproduct of the calculation of constant-dollar, or "real", GNP, has received increasing use over the past several years as a comprehensive composite index of the prices of all the

goods and services that make up the GNP. Unlike most other price indexes, which are constructed with fixed weights, the GNP deflator is based on shifting weights. This was explained in an article in the March 1969 SURVEY,¹

which carried a table for the period 1965-1968 comparing the behavior of the implicit deflator with that of alternative indexes of GNP prices using fixed weights. That table is updated below for the period from the first quarter of 1967 through the second quarter of 1970, based on the revised GNP estimates for 1967-1969 which

1. "Alternative Measures of Price Change for GNP" by Allan H. Young and Claudia Hawkins, SURVEY OF CURRENT BUSINESS, March 1969.

Price Changes as Measured by Implicit Deflators, Fixed Weighted Price Indexes, and Chain Indexes, Quarterly, First Quarter 1967 to Second Quarter 1970

[Percent change at annual rate]

	1967															
	I				II				III				IV			
	Implicit deflator	1958 weights	IV-1965 weights	Chain	Implicit deflator	1958 weights	IV-1965 weights	Chain	Implicit deflator	1958 weights	IV-1965 weights	Chain	Implicit deflator	1958 weights	IV-1965 weights	Chain
Gross national product.....	2.84	1.97	2.86	2.32	2.23	2.84	2.38	2.63	4.93	4.85	3.99	3.87	4.74	4.47	4.45	4.55
Personal consumption expenditures.....	1.86	1.81	1.45	1.51	1.68	2.06	2.05	2.69	3.58	3.23	3.28	3.27	3.21	3.18	3.33	3.37
Durable goods.....	.23	.73	.83	.04	-.28	.48	.43	.48	4.59	5.02	4.54	4.39	4.57	4.03	4.69	4.71
Nondurable goods.....	.70	.59	.02	1.75	1.08	1.71	1.70	3.21	3.11	3.17	3.18	2.97	2.98	2.44	2.49	2.49
Services.....	2.08	2.81	2.78	2.78	2.65	2.03	2.03	2.80	3.19	2.05	2.05	2.05	3.64	3.78	3.79	3.81
Gross private domestic investment.....	3.04	2.67	2.30	2.38	2.89	4.26	3.71	2.81	0.79	7.01	6.19	5.75	4.08	3.67	3.79	3.66
Fixed investment.....	3.17	2.65	2.29	2.30	1.09	3.38	2.91	2.88	4.53	4.79	4.37	4.20	3.85	4.23	4.26	4.03
Nonresidential.....	4.04	2.15	2.73	2.80	3.72	4.75	4.33	4.19	7.00	7.41	6.91	6.95	4.24	4.45	4.11	4.10
Structures.....	1.75	2.29	2.04	2.05	2.19	2.37	2.14	2.18	2.00	2.00	2.89	2.80	2.00	4.23	4.35	4.00
Producers' durable equipment.....	2.08	2.78	2.40	2.08	5.68	5.05	5.07	5.95	11.33	11.28	11.34	11.31	2.51	2.46	2.41	2.60
Residential structures.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Change in business inventories.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Net exports of goods and services.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Exports.....	-1.51	-1.91	-1.37	-1.38	-1.02	-1.60	-1.03	-1.03	1.30	1.41	1.41	1.43	1.04	1.39	1.34	1.34
Imports.....	1.61	1.42	1.38	1.38	-1.07	-2.41	-2.33	-2.33	2.23	2.15	2.21	2.19	-3.89	-3.30	-3.34	-3.31
Government purchases of goods and services.....	3.13	3.34	4.51	5.27	2.28	3.31	3.33	3.34	5.28	4.65	5.84	4.76	7.31	7.89	7.64	7.50
Federal.....	2.49	1.98	2.90	4.57	-1.58	1.41	1.40	1.27	2.90	1.93	1.27	2.13	0.36	10.16	10.13	8.05
State and local.....	4.49	6.11	6.00	5.97	5.08	6.68	6.51	6.40	7.80	7.90	7.85	7.69	4.78	4.83	5.39	5.96

	1968															
	I				II				III				IV			
	Implicit deflator	1958 weights	IV-1965 weights	Chain	Implicit deflator	1958 weights	IV-1965 weights	Chain	Implicit deflator	1958 weights	IV-1965 weights	Chain	Implicit deflator	1958 weights	IV-1965 weights	Chain
Gross national product.....	3.63	3.31	3.47	3.75	4.29	5.14	5.11	5.43	4.15	4.81	4.51	4.59	4.47	4.75	4.64	4.64
Personal consumption expenditures.....	3.77	4.45	4.34	4.38	4.22	4.63	4.38	4.34	2.78	3.33	3.15	3.15	4.33	4.32	4.76	4.75
Durable goods.....	2.18	2.85	2.66	2.72	2.37	2.14	2.01	2.63	7.81	2.01	2.59	2.51	4.75	4.84	4.50	4.40
Nondurable goods.....	4.50	4.68	4.58	4.58	4.00	5.24	5.15	5.13	2.97	2.90	2.80	2.78	4.47	4.64	4.57	4.50
Services.....	4.50	4.68	4.65	4.58	4.39	4.34	4.30	4.39	3.07	3.73	3.77	3.77	4.78	5.03	5.08	5.07
Gross private domestic investment.....	3.51	2.97	2.93	2.12	4.07	6.04	5.68	5.29	4.22	0.34	3.97	3.71	3.15	3.54	3.58	3.49
Fixed investment.....	3.44	2.35	2.24	2.35	3.18	4.86	4.57	4.30	3.10	4.71	4.71	4.40	2.00	3.84	3.78	3.58
Nonresidential.....	3.82	2.37	2.46	2.32	6.79	6.85	6.84	6.87	6.57	0.93	7.68	7.84	2.80	3.80	3.80	3.78
Structures.....	1.64	2.34	2.10	2.30	1.09	3.30	3.25	3.40	1.83	2.00	2.70	2.79	3.18	3.81	3.71	3.40
Producers' durable equipment.....	1.46	1.64	1.47	1.46	3.40	5.28	5.39	5.39	6.46	0.40	0.47	0.47	2.09	2.08	2.08	2.04
Residential structures.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Change in business inventories.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Net exports of goods and services.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Exports.....	-3.77	-3.99	-4.08	-4.12	11.17	11.33	11.32	11.31	-2.10	-2.31	-2.84	-2.35	1.16	1.35	1.47	1.38
Imports.....	2.04	3.39	3.28	3.20	4.33	5.46	4.47	4.47	-0.83	-0.82	-0.81	-0.80	2.00	1.81	1.84	1.85
Government purchases of goods and services.....	3.36	4.72	4.74	4.74	4.09	4.86	5.44	5.12	6.38	3.67	6.48	6.11	4.54	5.50	5.44	5.28
Federal.....	1.52	3.38	3.15	3.30	1.81	3.45	4.35	3.80	8.70	10.03	10.00	8.05	2.69	4.68	4.34	4.08
State and local.....	5.03	6.30	6.20	6.21	6.04	6.58	6.42	6.38	7.83	7.68	7.80	7.20	4.23	6.55	6.45	6.51

appeared in the July 1970 Survey and the estimates for the first two quarters of 1970 which appear in this issue.

Over longer periods, the GNP deflator and fixed-weighted indexes tend to move similarly. For instance, over the past 4½ years, the implicit deflator for total GNP and fixed-weighted price indexes using 1958 weights and fourth quarter 1965 weights have increased at the same average annual rate (4.2 percent). Within this time span, however, movements of the alternative price measures have sometimes differed significantly from that of the deflator.

Differences were pronounced in the second and third quarters of 1968, the third quarter of 1969, and the first and second quarters of 1970.

The effects of shifting weights on the GNP deflator have been particularly marked recently. From the fourth quarter of 1969 to the first quarter of 1970, decreases in the weights of certain consumer durables (notably autos) and of inventories, which have relatively low deflators, contributed to the large increase in the GNP deflator. The reverse is true for the change from the first to the second quarter of 1970,

when the increase in the GNP deflator was moderated by increases in the weights of these consumer durables and of inventories and by decreases in the weights of structures, which have relatively high deflators. When the effect of the Government pay raise—which added about 1 percentage point to the annual rate of increase in all versions of the GNP price indexes in the first quarter of 1970—is excluded, the rate of overall price increase as shown by the fixed-weighted indexes is about equal in the first and second quarters of 1970.

Price Changes as Measured by Implicit Deflators, Fixed Weighted Price Indexes, and Chain Indexes, Quarterly, First Quarter 1967 to Second Quarter 1970—Continued

[Percent change at annual rate]

	1969															
	I				II				III				IV			
	Implicit deflator	1958 weights	IV-1965 weights	Chain	Implicit deflator	1958 weights	IV-1965 weights	Chain	Implicit deflator	1958 weights	IV-1965 weights	Chain	Implicit deflator	1958 weights	IV-1965 weights	Chain
Gross national product.....	4.70	4.64	4.54	4.49	5.00	5.22	5.01	4.96	5.58	6.40	6.14	6.03	4.91	5.20	4.93	4.87
Personal consumption expenditures.....	3.45	3.92	3.81	3.75	5.03	6.26	5.11	5.62	4.78	4.68	4.79	4.85	4.78	5.10	4.94	4.86
Durable goods.....	1.82	1.80	1.48	1.54	2.80	3.08	3.13	2.97	2.01	3.36	3.00	2.59	2.30	2.43	2.53	2.67
Nondurable goods.....	2.22	3.88	3.67	3.54	6.34	5.70	6.74	6.08	4.93	4.34	5.31	5.04	5.47	2.78	6.72	5.02
Services.....	4.77	4.00	4.13	4.02	6.04	5.18	5.14	5.13	4.83	4.93	4.05	4.93	4.97	5.05	5.01	5.00
Gross private domestic investment.....																
Fixed investment.....	7.12	7.15	6.87	6.20	5.88	5.88	5.20	5.05	5.71	5.08	5.00	5.00	2.96	3.30	3.65	3.67
Nonresidential.....	5.48	6.02	5.87	5.14	3.22	3.82	4.07	4.51	7.28	6.78	6.43	6.10	3.82	4.64	4.94	4.49
Structures.....	13.37	11.20	11.46	11.53	7.07	8.07	7.73	7.79	11.30	9.70	10.04	9.89	6.20	4.36	4.63	4.65
Producers' durable equipment.....	2.73	2.22	2.12	2.00	2.36	3.75	3.40	3.29	4.13	4.50	4.22	4.20	4.29	4.72	4.49	4.41
Residential structures.....	0.32	0.23	3.91	0.32	6.75	4.70	6.70	5.73	4.40	4.57	4.82	4.63	1.01	1.04	1.02	1.02
Change in business inventories.....																
Net exports of goods and services.....																
Exports.....	6.66	5.20	6.39	6.46	-1.28	-2.11	-2.22	-2.40	7.00	7.39	7.40	7.43	11.18	10.03	10.00	10.88
Imports.....	3.82	2.72	2.81	2.83	1.73	2.77	2.30	2.04	6.48	5.81	5.92	5.05	12.40	12.51	12.50	12.60
Government purchases of goods and services.....																
Federal.....	4.36	4.05	4.33	4.41	7.28	5.81	5.57	6.71	10.04	10.58	96.13	9.68	5.07	7.00	6.16	5.88
State and local.....	3.27	2.00	2.82	2.50	7.18	4.82	4.70	4.71	14.48	14.12	14.55	13.74	6.43	5.18	6.75	6.45
State and local.....	5.72	6.42	6.27	6.20	6.28	6.06	6.87	6.06	6.00	6.51	6.32	6.10	4.73	3.85	5.82	5.37

	1970							
	I				II			
	Implicit deflator	1958 weights	IV-1965 weights	Chain	Implicit deflator	1958 weights	IV-1965 weights	Chain
Gross national product.....	6.43	6.38	6.84	5.86	4.32	5.10	5.46	5.01
Personal consumption expenditures.....	5.14	5.12	4.96	4.85	4.84	4.59	4.41	4.41
Durable goods.....	3.93	2.00	2.49	2.02	1.46	1.43	1.47	1.45
Nondurable goods.....	4.60	5.12	4.04	4.72	3.74	3.50	3.74	3.77
Services.....	5.66	5.06	5.37	5.81	5.88	6.16	6.18	6.17
Gross private domestic investment.....								
Fixed investment.....	5.04	4.21	4.38	4.37	4.30	5.23	6.28	5.11
Nonresidential.....	5.70	4.43	4.43	4.54	4.43	6.82	6.70	6.36
Structures.....	4.71	4.16	4.36	4.30	10.17	10.74	11.40	11.20
Producers' durable equipment.....	6.63	4.04	4.73	4.07	2.65	2.81	3.70	3.83
Residential structures.....	3.79	3.82	3.81	3.80	5.16	5.15	6.17	5.17
Change in business inventories.....								
Net exports of goods and services.....								
Exports.....	-0.00	-0.03	-0.04	-0.04	4.41	4.10	4.06	4.04
Imports.....	1.34	1.43	1.45	1.40	4.07	4.03	4.04	4.04
Government purchases of goods and services.....								
Federal.....	11.32	11.45	10.78	10.33	6.28	6.24	6.11	6.14
State and local.....	15.82	15.06	15.96	15.31	9.13	8.53	8.83	8.88
State and local.....	8.81	8.42	8.20	8.00	6.71	6.73	6.61	6.54